

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 March 2005 (24.03.2005)

PCT

(10) International Publication Number
WO 2005/027318 A1

(51) International Patent Classification⁷: **H02K 7/04**

(21) International Application Number:
PCT/JP2004/013595

(22) International Filing Date:
10 September 2004 (10.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-318146 10 September 2003 (10.09.2003) JP
2004-026748 3 February 2004 (03.02.2004) JP

(71) Applicant (for all designated States except US): **SEIKO EPSON CORPORATION** [JP/JP]; 4-1, Nishishinjuku 2-chome, Shinjuku-ku, Tokyo, 1630811 (JP).

(72) Inventor; and

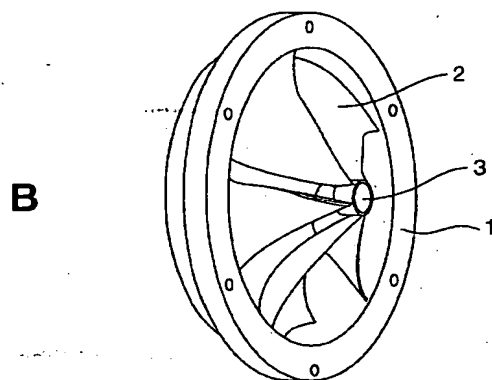
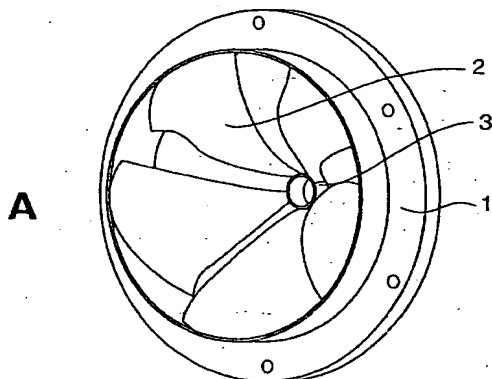
(75) Inventor/Applicant (for US only): **TAKEUCHI, Ke-satoshi** [JP/JP]; c/o Seiko Epson Corporation, 3-5, Owa 3-chome, Suwa-shi, Nagano 3928502 (JP).

(74) Agents: **INABA, Yoshiyuki et al.**; TMI Associates, 23rd Floor, Roppongi Hills Mori, Tower, 6-10-1, Roppongi, Minato-ku, Tokyo 1066123 (JP).

(81) Designated States (unless otherwise indicated: for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: FAN UNIT USING MOTOR EQUIPPED WITH ROTOR UNITED WITH FINS



(57) Abstract: A fan unit comprises an electric rotary machine (e.g. electric motor) having a rotor and a fin structure unified with the rotor. The fan unit further comprises a rotation mechanism for rotating the rotor. The rotor is formed to have an opening at a central portion thereof in a direction along which the opening permits fluid to flow. The fin structure is coupled with a peripheral portion of the opening so as to be unified with the rotor. The peripheral portion incorporates the rotation mechanism therein.

WO 2005/027318 A1



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- with amended claims

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.